

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A nitride compound semiconductor light emitting device comprising:

a GaN substrate having a (0001) plane whose crystal orientation which is tilted away from its main plane orientation of a <0001> direction by an angle which is equal to or greater than about 0.05° and which is equal to or less than about 2°, and

a semiconductor multilayer structure formed on the GaN substrate,

wherein the semiconductor multilayer structure includes:

an acceptor doping layer containing a nitride compound semiconductor comprising $Ga_xIn_yAl_{(1-(x+y))}N$ (where $0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x+y \leq 1$), and

an active layer containing a nitride compound semiconductor comprising $Ga_xIn_yAl_{(1-(x+y))}N$ (where $0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x+y \leq 1$).

Claim 2 (cancelled)

Claim 3 (original): A nitride compound semiconductor light emitting device according to claim 1, wherein the GaN substrate has a crystal orientation which is tilted away from a <0001> direction in a <11-20> or <1-100> direction.

Claim 4 (previously presented): A nitride compound semiconductor light emitting device according to claim 1, wherein the acceptor doping layer exhibits a p-type conductivity as grown.

Claim 5 (original): A nitride compound semiconductor light emitting device according to claim 1, wherein the GaN substrate and the active layer are formed so as to be apart from each other by a distance which is equal to or greater than about 1 μm .

Claim 6 (original): A nitride compound semiconductor light emitting device according to claim 1, wherein the active layer has a quantum well structure, and the active layer has an averaged surface roughness which is equal to or less than a thickness of a well layer in the quantum well structure.

Claim 7 (original): A nitride compound semiconductor light emitting device according to claim 1, wherein the active layer includes at least one well layer and at least one barrier layer.

Claim 8 (withdrawn): A method for producing a nitride compound semiconductor light emitting device, wherein a semiconductor multilayer structure including an active layer of a quantum well structure made by a nitride compound semiconductor and an acceptor doping layer is integrated on a GaN substrate having a crystal orientation which is tilted away from a <0001> direction by an angle which is equal to or greater than about 0.05° and which is equal to or less than about 2°, the active layer including at least one barrier layer and at least one well layer, the method comprising the steps of:

stopping the growth of the active layer for a certain period of time after forming the well layer of the active layer including the at least one barrier layer and at least one well layer; and

stopping the growth of the nitride compound semiconductor for a certain period of time after forming the nitride compound semiconductor which contacts with the well layer and becomes the barrier layer having band-gap energy larger than that of the well layer.

Claim 9 (withdrawn): A method according to claim 8, wherein the predetermined length of a wait period is equal to or greater than about 1 second and is equal to or less than about 60 minutes.

Claim 10 (withdrawn): A method according to claim 8, further comprising:

supplying a carrier gas into the chamber, in which the GaN substrate is placed, during a wait period after at least one of the at least one well layer and the at least one barrier layer has been formed, the carrier gas comprising nitrogen as a main component.

Claim 11 (withdrawn): A method according to claim 8, further comprising:
supplying a carrier gas and a group V gas into a chamber, in which the GaN substrate is placed, during a wait period after at least one of the at least one well layer and the at least one barrier layer has been formed, the carrier gas comprising nitrogen as a main component.

Claim 12 (previously presented): A nitride compound semiconductor light emitting device according to claim 1, wherein said active layer is formed evenly with respect to a macroscopic view and a microscopic view relating to an order of thickness of the active layer.

Claim 13 (previously presented): A nitride compound semiconductor light emitting device according to claim 1, wherein said acceptor doping layer is formed evenly with respect to a macroscopic view and a microscopic view relating to an order of thickness of the active layer.

Claim 14 (new): A nitride compound semiconductor light emitting device comprising:
a GaN substrate having a (0001) plane whose crystal orientation is tilted away from a <0001> direction by an angle which is equal to or greater than about 0.05° and which is equal to or less than about 2°, and
a n-type layer containing a nitride compound semiconductor located above the GaN substrate, and
an active layer containing a nitride compound semiconductor located above the GaN substrate, and
an acceptor doping layer containing a nitride compound semiconductor comprising $\text{Ga}_x\text{In}_y\text{Al}_{1-(x+y)}\text{N}$ (where $0 \leq x \leq 1$; $0 \leq y \leq 1$; and $0 \leq x+y \leq 1$) located above the GaN substrate and having a hole density of about 10^{17} cm^{-3} or more.

Claim 15 (new): A nitride compound semiconductor light emitting device according to claim 14, wherein the GaN substrate has a crystal orientation which is tilted away from a <0001> direction in a <11-20> or <1-100> direction.

Claim 16 (new): A nitride compound semiconductor light emitting device according to claim 14, wherein the acceptor doping layer exhibits a p-type conductivity as grown.

Claim 17 (new): A nitride compound semiconductor light emitting device according to claim 14, wherein the GaN substrate and the active layer are formed so as to be apart from each other by a distance which is equal to or greater than about 1 μm .

Claim 18 (new): A nitride compound semiconductor light emitting device according to claim 17, wherein the active layer has a quantum well structure, and the active layer has an averaged surface roughness which is equal to or less than a thickness of a well layer in the quantum well structure.